

## **EXHIBIT A**

**Exhibit A1: Proposed Constructions & Support for the '996 Patent**

**Exhibit A2: Proposed Constructions & Support for the '398 & '313 Patents**

**Exhibit A3: Proposed Constructions & Support for the '654 Patent**

**Exhibit A4: Proposed Constructions & Support for the '108 Patent**

**EXHIBIT A1: '996 Patent Proposed Constructions & Support**

U.S. Patent No. 7,809,996		
'996 Claim Terms, Phrases, or Clauses	ASSIA's Proposed Constructions and Support	Charter's Proposed Constructions and Support
"periodically monitor"/ "periodically monitored"  (claim 20)	<p>"monitor at fixed intervals"/ "monitored at fixed intervals"</p> <p><b>Intrinsic Evidence:</b> '996 specification at Title, Abstract, col. 1:36-38, 2:43-47, 3:31-35, 4:7-12, 4:21-24, 6:5-11, 13:1-23, 13:28-14:10, 15:52-56, 15:63-16:18, 16:55-17:38; FIGS. 4-7 and associated text, claims 1, 6, 9, 10, 11, 12, 15, 16, 17, 18, 19, 20.</p> <p>US Pat. No. 7,428,669 at claims 1, 14, 15, 16, 25, 27, 28.</p> <p><b>Extrinsic Evidence:</b> Definition of "periodic," "period," and "periodic signal," Oxford Dictionary of Electronics &amp; Electrical Engineering, 5th ed., 2018 [ASSIA_CHARTER-00033814 – ASSIA_CHARTER-00033815].</p> <p>ASSIA reserves the right to rely on the testimony of Matthew Pooley. Mr. Pooley is expected to testify regarding how one of ordinary skill in the art would understand this term in light of the claim language, intrinsic evidence, and extrinsic evidence. Mr. Pooley is expected to testify regarding how one of ordinary skill in the art would understand statements in the specification and file history. Mr. Pooley is expected to testify that one of ordinary skill in the art would understand this term to be a limitation and give life, meaning, and vitality to the claims. Mr. Pooley is expected to testify about the knowledge of one of ordinary skill in the art and</p>	<p>Plain and ordinary meaning</p> <p><b>Intrinsic Evidence:</b> '996 Patent at 4:54-64; 5:57-6:4; 9: 35-43; 10:6-14; 11:5-12:3; 13:10-41; 16:10-18; 17:10-22; claim 20.</p> <p><b>Extrinsic Evidence:</b> To the extent ASSIA relies on expert testimony in support of its position on the proposed constructions of this term, Charter reserves the right to rely on expert testimony of Dr. Zhi Ding in response. Charter further reserves the right to rely on additional extrinsic evidence to rebut ASSIA's positions on the proposed constructions of this term.</p>

**EXHIBIT A1: '996 Patent Proposed Constructions & Support**

	<p>the background of the art relevant to the construction of this term. Mr. Pooley will further rebut any expert testimony offered by Charter.</p>	
retransmission overhead control signal  (claim 20)	<p>“a signal for controlling one or more parameters that affect retransmission overhead”</p> <p><b>Intrinsic Evidence:</b> ’996 specification at Title, Abstract, col. 1:36-38, 2:37-47, 3:31-35, 4:7-12, 4:21-29, 4:46-53, 6:5-11, 13:1-23, 13:28-14:10, 14:11-24, 14:43-49, 15:52-56, 16:55-17:38; FIGS. 4-7 and associated text, claims 1-11, 14, 17-20.</p> <p>US Provisional Pat. App. No. 60/527,853 at ASSIA-CHARTER-00017557-58, -00017571, -00017779, -00017942, -00017977.</p> <p>’996 File History, Notice of Allowability at pp. 1-3.</p> <p><b>Extrinsic Evidence:</b> Definition of “overhead” (Newton’s Telecom Dictionary, 18th ed., 2002, pg. 542) [ASSIA_CHARTER-00032837 – ASSIA_CHARTER-00032840].</p> <p>Eberhardt, Ryan and Rydberg, Kathryn, “Retransmission Timeout in TCP,” SIGCOMM’18, Aug. 21-23, 2018 [ASSIA_CHARTER-00032929 – ASSIA_CHARTER-00032934].</p> <p>ASSIA reserves the right to rely on the testimony of Matthew Pooley. Mr. Pooley is expected to testify regarding how one of</p>	<p>Indefinite</p> <p><b>Intrinsic Evidence:</b> ’996 Patent at 2:30-47; 4:13-30; 9:1-13:9; 14:25-17:10; 17:39-18:47; claim 1; claim 9; claim 11; claim 17; claim 18, claim 19; claim 20; Fig. 5 (and associated text).</p> <p>Notice of Allowability. ’996 File History at ASSIA_CHARTER-00020036-039.</p> <p>Office Action, State Intellectual Property Office of P.R. China. ’996 File History at ASSIA_CHARTER-00019561-566.</p> <p>Recommendation G. 992.1. ’996 File History at ASSIA_CHARTER-00018741, 751-764.</p> <p>U.S. Pat. No. 6,507,608. ’996 File History at ASSIA_CHARTER-00020011.</p> <p>U.S. Pat. No. 7,131,038. ’996 File History at ASSIA_CHARTER-00020003.</p> <p><b>Extrinsic Evidence:</b> Testimony of Dr. Zhi Ding will show that “retransmission overhead control signal” is not a term of art and that a POSITA would not understand with reasonable certainty, and would not have understood</p>

**EXHIBIT A1: '996 Patent Proposed Constructions & Support**

	<p>ordinary skill in the art would understand this term in light of the claim language, intrinsic evidence, and extrinsic evidence. Mr. Pooley is expected to testify regarding how one of ordinary skill in the art would understand statements in the specification and file history. Mr. Pooley is expected to testify that one of ordinary skill in the art would understand this term to be a limitation and give life, meaning, and vitality to the claims. Mr. Pooley is expected to testify about the knowledge of one of ordinary skill in the art and the background of the art relevant to the construction of this term. Mr. Pooley will further rebut any expert testimony offered by Charter.</p>	<p>with reasonable certainty at the time of the alleged invention, the scope of this term.</p> <p>To the extent ASSIA relies on expert testimony in support of its position on the proposed constructions of this term, Charter reserves the right to rely on expert testimony of Dr. Zhi Ding in response. Charter further reserves the right to rely on additional extrinsic evidence to rebut ASSIA's positions on the proposed constructions of this term.</p>
retransmission (claim 20)	<p>No construction necessary; plain and ordinary meaning. This term should not be construed separately from "retransmission overhead control signal".</p> <p><b>Intrinsic Evidence:</b> '996 specification at Title, Abstract, col. 1:36-38, 2:43-47, 3:31-35, 4:7-12, 4:21-29, 4:46-53, 6:5-11, 13:1-23, 13:28-14:10, 14:11-24, 14:43-49, 15:52-56, 16:55-17:38; FIGS. 4-7 and associated text, claims 1-11, 14, 17-20.</p> <p>'996 File History, Notice of Allowability at pp. 1-3.</p> <p><b>Extrinsic Evidence:</b> Eberhardt, Ryan and Rydberg, Kathryn, "Retransmission Timeout in TCP," SIGCOMM'18, Aug. 21-23, 2018 [ASSIA_CHARTER-00032929 – ASSIA_CHARTER-00032934].</p> <p>ASSIA reserves the right to rely on the testimony of Matthew</p>	<p>"transmission of the same data that was previously transmitted"</p> <p><b>Intrinsic Evidence:</b> '996 Patent at 2:63-3:4; 3:22-50; 3:63-4:64, 5:40-6:4; 9:1-13:9; 14:25-17:10; 17:39-18:47; claim 20; Fig. 4 (and associated text).</p> <p>Recommendation G. 992.1. '996 File History at ASSIA_CHARTER-00018751-764.</p> <p>Notice of Allowability. '996 File History at ASSIA_CHARTER-00020036-039.</p> <p><b>Extrinsic Evidence:</b> Testimony of Dr. Zhi Ding will show that a POSITA would understand, and would have understood at the time of the alleged invention, that the term "retransmission" in the context of '996 patent means "transmission of the same data that was previously transmitted."</p>

**EXHIBIT A1: '996 Patent Proposed Constructions & Support**

	<p>Pooley. Mr. Pooley is expected to testify regarding how one of ordinary skill in the art would understand this term in light of the claim language, intrinsic evidence, and extrinsic evidence. Mr. Pooley is expected to testify regarding how one of ordinary skill in the art would understand statements in the specification and file history. Mr. Pooley is expected to testify that one of ordinary skill in the art would understand this term to be a limitation and give life, meaning, and vitality to the claims. Mr. Pooley is expected to testify about the knowledge of one of ordinary skill in the art and the background of the art relevant to the construction of this term. Mr. Pooley will further rebut any expert testimony offered by Charter.</p>	<p>Retransmission: The procedure of transmitting a message for a second or subsequent time. Performed when it is assumed that the previous copy of the message was not successfully delivered. Gilbert Held, <i>Dictionary of Communications Technology</i> 451 (3d ed. 1998).</p> <p>Retransmit: to transmit again; to transmit back; to transmit to a stage further. <i>The Chambers Dictionary</i> 1293 (9th ed. 2003).</p>
--	--	--

**EXHIBIT A2: '398 and '313 Patents Proposed Constructions and Support**

U.S. Patent No. 10,848,398		
'398 Claim Terms, Phrases, or Clauses	ASSIA's Proposed Constructions and Support	Charter's Proposed Constructions and Support
processed data  (Claim 1)	<p>No construction necessary; plain and ordinary meaning, which need not include all of the “collective processed data from the plurality of communication units”.</p> <p><b>Intrinsic Evidence:</b> '398 specification at col. 2:64-4:18, 4:42-5:59, 7:24-10:41, 10:34-31, 12:39-14:49, 15:15-42, 15:54-16:16, 17:3-18:8, FIGS. 2-5 and associated text.</p> <p><b>Extrinsic Evidence:</b> ASSIA reserves the right to rely on the testimony of Matthew Pooley. Mr. Pooley is expected to testify regarding how one of ordinary skill in the art would understand this term in light of the claim language, intrinsic evidence, and extrinsic evidence. Mr. Pooley is expected to testify regarding how one of ordinary skill in the art would understand statements in the specification and file history. Mr. Pooley is expected to testify that one of ordinary skill in the art would understand this term to be a limitation and give life, meaning, and vitality to the claims. Mr. Pooley is expected to testify about the knowledge of one of ordinary skill in the art and the background of the art relevant to the construction of this term. Mr. Pooley will further rebut any expert testimony offered by Charter.</p>	<p>“collective processed data from the plurality of communication units”</p> <p><b>Intrinsic Evidence:</b> 398 Patent at Abstract, 2:64-3:9; 3:34-55; 5:17-33; 7:34-53; 12:39-13:2; 15:15-31; claim 1; claim 20; Figs. 2-4 (and associated text).</p> <p>10/26/2018 Final Office Action. '398 File History at ASSIA_CHARTER-00006475-6497.</p> <p>11/13/2018 Applicant-Initiated Interview Summary of 11/6/2018 interview and agenda. '398 File History at ASSIA_CHARTER-00006579-6587.</p> <p>12/18/2018 Applicant's Response to 10/26/2018 Final Office Action. '398 File History at ASSIA_CHARTER-00006589-6598.</p> <p>1/22/2018 Applicant-Initiated Interview Summary of 01/16/2018 interview and agenda. '398 File History at ASSIA_CHARTER-00001139-1148.</p> <p>03/09/2018 Applicant's Response to 12/29/2017 Non-Final Office Action. '398 File History at ASSIA_CHARTER-00001178-1188.</p> <p>01/31/2019 Non-Final Office Action. '398 File History at ASSIA_CHARTER-00006653-6680.</p> <p>Applicant-Initiated Interview Summary of 01/28/2019 interview and agenda. '398 File History at ASSIA_CHARTER-00006681.</p>

**EXHIBIT A2: '398 and '313 Patents Proposed Constructions and Support**

		<p>04/30/2019 Applicant-Initiated Interview Summary of 04/25/2019 interview and agenda. '398 File History at ASSIA_CHARTER-00006739-6747.</p> <p>04/30/2019 Applicant's Response to 01/31/2019 Non-Final Office Action. '398 File History at ASSIA_CHARTER-00006749-6759.</p> <p>08/01/2019 Final Office Action. '398 File History at ASSIA_CHARTER-00006879-6904.</p> <p>11/29/2019 Applicant's Response to 08/01/2019 Final Office Action. '398 File History at ASSIA_CHARTER-00006936-6944.</p> <p>01/28/2020 Applicant's Response to 08/01/2019 Final Office Action. '398 File History at ASSIA_CHARTER-00006974-6982.</p> <p><b>Extrinsic Evidence:</b> To the extent ASSIA relies on expert testimony in support of its position on the proposed constructions of this term, Charter reserves the right to rely on expert testimony of Dr. Zhi Ding in response. Charter further reserves the right to rely on additional extrinsic evidence to rebut ASSIA's positions on the proposed constructions of this term.</p>
the data further comprises determining a received signal strength indication  (Claim 2)	No construction necessary; plain and ordinary meaning.  <b>Intrinsic Evidence:</b> '398 specification at col. 1:55-2:4, 9:26-10:56, 15:15-32, 15:54-16:16.  <b>Extrinsic Evidence:</b> ASSIA reserves the right to rely on the testimony of Matthew Pooley. Mr. Pooley is expected to testify	Indefinite  <b>Intrinsic Evidence:</b> '398 Patent at 1:55-2:13, 9:27-10:56, 15:15-16:16.  01/11/2016 Non-Final Office Action, '398 File History at ASSIA_CHARTER-00000953-0967.

**EXHIBIT A2: '398 and '313 Patents Proposed Constructions and Support**

	<p>regarding how one of ordinary skill in the art would understand this term in light of the claim language, intrinsic evidence, and extrinsic evidence. Mr. Pooley is expected to testify regarding how one of ordinary skill in the art would understand statements in the specification and file history. Mr. Pooley is expected to testify that one of ordinary skill in the art would understand this term to be a limitation and give life, meaning, and vitality to the claims. Mr. Pooley is expected to testify about the knowledge of one of ordinary skill in the art and the background of the art relevant to the construction of this term. Mr. Pooley will further rebut any expert testimony offered by Charter.</p>	<p>05/11/2016 Applicant Response to Non-Final Office Action. '398 File History at ASSIA_CHARTER-00000979-0991.</p> <p>02/23/2017 Applicant Response after Final Action. '398 File History at ASSIA_CHARTER-00001034-1052.</p> <p>01/22/2018 Applicant-Initiated Interview Summary of 01/16/2018 interview and agenda. '398 File History at ASSIA_CHARTER-00001139-1148.</p> <p>03/09/2018 Applicant's Response to 12/29/2017 Non-Final Office Action. '398 File History at ASSIA_CHARTER-00001178-1188.</p> <p>10/26/2018 Final Office Action. '398 File History at ASSIA_CHARTER-00006475-6497.</p> <p>01/31/2019 Non-Final Office Action. '398 File History at ASSIA_CHARTER-00006653-6680.</p> <p>04/30/2019 Applicant-Initiated Interview Summary of 04/25/2019 interview and agenda. '398 File History at ASSIA_CHARTER-00006739-6747.</p> <p>04/30/2019 Applicant's Response to 01/31/2019 Non-Final Office Action. '398 File History at ASSIA_CHARTER-00006749-6759.</p> <p>08/01/2019 Final Office Action. '398 File History at ASSIA_CHARTER-00006879-6904.</p> <p>11/29/2019 Applicant's Response to 08/01/2019 Final Office Action. '398 File History at ASSIA_CHARTER-00006936-6944.</p>
--	--	--

**EXHIBIT A2: '398 and '313 Patents Proposed Constructions and Support**

		<p>01/28/2020 Applicant's Response to 08/01/2019 Final Office Action. '398 File History at ASSIA_CHARTER-00006974-6982.</p> <p>02/27/2020 Non-Final Office Action. '398 File History at ASSIA_CHARTER-00007219-7248.</p> <p><b>Extrinsic Evidence:</b> To the extent ASSIA relies on expert testimony in support of its position on the proposed constructions of this term, Charter reserves the right to rely on expert testimony of Dr. Zhi Ding in response. Charter further reserves the right to rely on additional extrinsic evidence to rebut ASSIA's positions on the proposed constructions of this term.</p>
--	--	---

**EXHIBIT A2: '398 and '313 Patents Proposed Constructions and Support**

U.S. Patent No. 11,770,313		
'313 Claim Terms, Phrases, or Clauses	ASSIA'S Proposed Constructions and Support	Charter's Proposed Constructions and Support
processed data  (Claim 19)	<p>No construction necessary; plain and ordinary meaning, which need not include all of the “collective processed data from the plurality of communication units”.</p> <p><b>Intrinsic Evidence:</b> '313 specification at col. 2:64-4:18, 4:42-5:59, 7:24-10:41, 10:34-31, 12:39-14:49, 15:15-42, 15:54-16:16, 17:3-18:8, FIGS. 2-5 and associated text; and all corresponding passages in the '313 specification.</p> <p><b>Extrinsic Evidence:</b> ASSIA reserves the right to rely on the testimony of Matthew Pooley. Mr. Pooley is expected to testify regarding how one of ordinary skill in the art would understand this term in light of the claim language, intrinsic evidence, and extrinsic evidence. Mr. Pooley is expected to testify regarding how one of ordinary skill in the art would understand statements in the specification and file history. Mr. Pooley is expected to testify that one of ordinary skill in the art would understand this term to be a limitation and give life, meaning, and vitality to the claims. Mr. Pooley is expected to testify about the knowledge of one of ordinary skill in the art and the background of the art relevant to the construction of this term. Mr. Pooley will further rebut any expert testimony offered by Charter.</p>	<p>“collective processed data from the plurality of communication units”</p> <p><b>Intrinsic Evidence:</b> 313 Patent at Abstract; 3:5-17; 3:42-63; 5:25-41; 7:44-63; 12:39-13:2; 15:19-34; claim 1; claim 14, claim 16; claim 19; Figs. 2-4 (and associated text).</p> <p>10/26/2018 Final Office Action. '398 File History at ASSIA_CHARTER-00006475-6497.</p> <p>11/13/2018 Applicant-Initiated Interview Summary of 11/6/2018 interview and agenda. '398 File History at ASSIA_CHARTER-00006579-6587.</p> <p>12/18/2018 Applicant’s Response to 10/26/2018 Final Office Action. '398 File History at ASSIA_CHARTER-00006589-6598.</p> <p>1/22/2018 Applicant-Initiated Interview Summary of 01/16/2018 interview and agenda. '398 File History at ASSIA_CHARTER-00001139-1148.</p> <p>03/09/2018 Applicant’s Response to 12/29/2017 Non-Final Office Action. '398 File History at ASSIA_CHARTER-00001178-1188.</p> <p>01/31/2019 Non-Final Office Action. '398 File History at ASSIA_CHARTER-00006653-6680.</p> <p>Applicant-Initiated Interview Summary of 01/28/2019 interview and agenda.</p>

**EXHIBIT A2: '398 and '313 Patents Proposed Constructions and Support**

	<p>'398 File History at ASSIA_CHARTER-00006681.</p> <p>04/30/2019 Applicant-Initiated Interview Summary of 04/25/2019 interview and agenda. '398 File History at ASSIA_CHARTER-00006739-6747.</p> <p>04/30/2019 Applicant's Response to 01/31/2019 Non-Final Office Action. '398 File History at ASSIA_CHARTER-00006749-6759.</p> <p>08/01/2019 Final Office Action. '398 File History at ASSIA_CHARTER-00006879-6904.</p> <p>11/29/2019 Applicant's Response to 08/01/2019 Final Office Action. '398 File History at ASSIA_CHARTER-00006936-6944.</p> <p>01/28/2020 Applicant's Response to 08/01/2019 Final Office Action. '398 File History at ASSIA_CHARTER-00006974-6982.</p> <p><b>Extrinsic Evidence:</b> To the extent ASSIA relies on expert testimony in support of its position on the proposed constructions of this term, Charter reserves the right to rely on expert testimony of Dr. Zhi Ding in response. Charter further reserves the right to rely on additional extrinsic evidence to rebut ASSIA's positions on the proposed constructions of this term.</p>
--	---

**EXHIBIT A3: '654 Patent Proposed Constructions and Support**

U.S. Patent No. 11,050,654		
'654 Claim Terms, Phrases, or Clauses	ASSIA's Proposed Constructions and Support	Charter's Proposed Constructions and Support
on-demand change request  (Claims 1, 18)	<p>No construction necessary; plain and ordinary meaning.</p> <p><b>Intrinsic Evidence:</b> '654 specification at col. 8:61-9:5, 11:35-45, 14:1-11, 17:53-18:11, 19:11-13, 20:22-25, 23:20-22, 24:37-39, 25:23-41, Figs. 1, 4B and related text, claims 1, 18.</p> <p>US Provisional Pat. App. No. 61/671,672 ¶¶ 0032, 0048, 0061, 0074, 00105, 00110, Figs. 1, 4B and related text, claims 10, 48, 89.</p> <p>'654 Patent File history: January 8, 2018 Response to Non-Final Office Action; June 25, 2018 Response to Final Office Action; Sept. 24, 2018 Appeal Brief; April 1, 2019 Reply Brief.</p> <p><b>Extrinsic Evidence:</b> ASSIA reserves the right to rely on the testimony of Richard Kramer. Mr. Kramer is expected to testify regarding how one of ordinary skill in the art would understand this term in light of the claim language, intrinsic evidence, and extrinsic evidence. Mr. Kramer is expected to testify regarding how one of ordinary skill in the art would understand statements in the specification and file history. Mr. Kramer is expected to testify that one of ordinary skill in the art would understand this term to be a limitation and give life, meaning, and vitality to the claims. Mr. Kramer is expected to testify about the knowledge of one of ordinary skill in the art and the background of the art relevant to the construction</p>	<p>"an active step, performed by the downloadable agent, to request change"</p> <p><b>Intrinsic Evidence:</b> '654 Patent at 5:39-43; 8:61-9:5; 11:35-45; 14:1-11; 17:53-18:11; 19:11-34; 20:22-34; 23:20-29; 24:37-45; claims 1-6; claims 8-12; claim 16; claims 18-22; claim 33; claim 34; claim 36.</p> <p>03/28/2017 Final Office Action. '654 File History at ASSIA_CHARTER-00008166 – 8186.</p> <p>06/01/2017 Applicant's Response to Final Office Action. '654 File History at ASSIA_CHARTER-00008191-8206.</p> <p>06/21/2017 Advisor Action. '654 File History at ASSIA_CHARTER-00008210 - 8217.</p> <p>06/28/2017 Amendment and Request for Continued Examination. '654 File History at ASSIA_CHARTER-00008218 - 8232.</p> <p>09/07/2017 Final Office Action. '654 File History at ASSIA_CHARTER-00008366 - 8382.</p> <p>01/08/2018 Response to Non-Final Office Action. '654 File History at ASSIA_CHARTER-00008482 - 8496.</p> <p>04/24/2018 Final Office Action. '654 File History at ASSIA_CHARTER-</p>

**EXHIBIT A3: '654 Patent Proposed Constructions and Support**

	<p>of this term. Mr. Kramer will further rebut any expert testimony offered by Charter.</p>	<p>00008592 - 8608.  06/25/2018 Response to Final Office Action. '654 File History at ASSIA_CHARTER-00008626 - 8640.  07/19/2018 Advisory Action. '654 File History at ASSIA_CHARTER-00008644 - 8640.  08/17/2018 SIPO Rejection. '654 File History at ASSIA_CHARTER-00008781 - 8832)  02/27/2019 SIPO Notification of Reexamination. '654 File History at ASSIA_CHARTER-00008919 – 8951.  04/05/2019 Applicant's Response to SIPO Notification of Reexamination. '654 File History at ASSIA_CHARTER-00008956 - 8958.  09/24/2018 Applicant's Appeal Brief. '654 File History at ASSIA_CHARTER-00008743 - 8777.  02/01/2019 Examiner's Answer. '654 File History at ASSIA_CHARTER-00008841 - 8846.  04/01/2019 Applicant's Appeal Brief. '654 File History at ASSIA_CHARTER-00008853 - 8859.  12/09/2020 Decision on Appeal. '654 File History at ASSIA_CHARTER-00008991 - 8998.  02/24/2021 Notice of Allowance. '654 File History at ASSIA_CHARTER-00009000 - 9007.</p>
--	---	---

**EXHIBIT A3: '654 Patent Proposed Constructions and Support**

		<p><b>Extrinsic Evidence:</b></p> <p>On-demand: That which is available only when paid or requested <i>Wiley Electrical and Electronics Engineering Dictionary</i> 527 (IEEE Press, 2004).</p> <p>On-demand: Available for delivery to a customer immediately upon request, as by transmission over a network. On-demand software can be downloaded directly after purchasing it. <i>High Definition: An A to Z Guide to Personal Technology</i> 221 (2006).</p> <p>On-Demand Services: On demand services [sic] interactive programming services that provide or entitle a customer to receive or gain access to specific services after they request (demand) the service. On demand services are typically provided for a single use or session with a fixed termination event (download complete) or time (viewing period). On demand services users are often billed per event for the specific service that is requested. On demand services through the television may include Internet access, videoconferencing, instant messaging and a variety of other interactive sessions. On demand services may be made be [sic] simplified and made more valuable through the use of sophisticated Electronic Program Guides (EPGs) that can be dynamically changed or updated. <i>Telecom Dictionary</i> 388 (2007).</p> <p>On-demand system: A system, especially in computer and data-processing operations, that delivers information or service immediately upon request. Stan Gibilisco, <i>The Illustrated Dictionary of Electronics</i> 483 (7th ed. 1997).</p>
--	--	--

**EXHIBIT A3: '654 Patent Proposed Constructions and Support**

		To the extent ASSIA relies on expert testimony in support of its position on the proposed constructions of this term, Charter reserves the right to rely on expert testimony of Dr. Zhi Ding in response. Charter further reserves the right to rely on additional extrinsic evidence to rebut ASSIA's positions on the proposed constructions of this term.
WAN performance information  (Claims 1, 3, 8, 16, 18, 20, 33, 36)	<p>No construction necessary; plain and ordinary meaning.</p> <p><b>Intrinsic Evidence:</b> '654 specification at Abstract, col. 1:28-41, 2:61-67, 3:13-19, 5:50-55, 6:51-55, 6:61-7:2, 7:17-22, 7:23-25, 7:26-31, 7:32-48, 7:49-56, 7:57-60, 9:62-10:1, 10:5-17, 17:10-24, 17:43-52, 18:16-43, 19:1-10, 25:23-41, 25:44-46, 25:66-26:18, 27:1-3, 27:4-8, 27:14-16, 27:22-41, 27:44-46, 27:54-64, 28:28-45, 29:23-25, FIGS. 3, 4A, 4B, 5A, 5B, 6A, 6B, and associated text, Claims 1, 3, 8, 16, 18, 20, 33, 36.</p> <p>US Provisional Pat. App. No. 61/671,672: ¶¶ 0015, 0018, 0034, 0036, 0040, 0053, 0094, 0095, 0097, 00100, 00101, 00104, claims 1, 3, 9, 14, 16, 19, 29, Abstract.</p> <p>'654 patent File History: Dec. 28, 2016 Amendment and Remarks; June 1, 2017 Response to Final Office Action; June 28, 2017 Amendment Filed with a Request for Continued Examination.</p> <p><b>Extrinsic Evidence:</b> ASSIA reserves the right to rely on the testimony of Richard Kramer. Mr. Kramer is expected to testify regarding how one of ordinary skill in the art would understand this term in light of the claim language, intrinsic evidence, and extrinsic evidence. Mr.</p>	<p>"data related to the communication links within the WAN, which does not include data related to transactions at the application layer related to client-server transactions that are executed"</p> <p><b>Intrinsic Evidence:</b> '654 Patent at Abstract; 2:48-3:2; 3:13-24; 5:50-58; 6:51-7:31; 9:22-10:17; 17:10-52; 18:16-40; 19:1-10; claims 1-6; claims 8-12; claim 16; claims 18-22; claim 33; claim 34, claim 36; Fig. 3 (and associated text).</p> <p>07/28/2016 Non-Final Office Action. '654 File History at ASSIA_CHARTER-00008095-8116.</p> <p>12/28/2016 Applicant's Response to Non-Final Office Action. '654 File History at ASSIA_CHARTER-00008126 - 8151.</p> <p>06/01/2017 Applicant's Response to Final Office Action. '654 File History at ASSIA_CHARTER-00008191-8206.</p> <p>02/27/2019 SIPO Notification of Reexamination. '654 File History at ASSIA_CHARTER-00008919 – 8951.</p> <p>04/05/2019 Applicant's Response to SIPO Notification of</p>

**EXHIBIT A3: '654 Patent Proposed Constructions and Support**

	<p>Kramer is expected to testify regarding how one of ordinary skill in the art would understand statements in the specification and file history. Mr. Kramer is expected to testify that one of ordinary skill in the art would understand this term to be a limitation and give life, meaning, and vitality to the claims. Mr. Kramer is expected to testify about the knowledge of one of ordinary skill in the art and the background of the art relevant to the construction of this term. Mr. Kramer will further rebut any expert testimony offered by Charter.</p>	<p>Reexamination. '654 File History at ASSIA_CHARTER-00008956 - 8958.</p> <p><b>Extrinsic Evidence:</b></p> <p>To the extent ASSIA relies on expert testimony in support of its position on the proposed constructions of this term, Charter reserves the right to rely on expert testimony of Dr. Zhi Ding in response. Charter further reserves the right to rely on additional extrinsic evidence to rebut ASSIA's positions on the proposed constructions of this term.</p>
collect LAN performance data from at least one of the computing device and other device  (Claims 4, 21)	<p>No construction necessary; plain and ordinary meaning.</p> <p><b>Intrinsic Evidence:</b> '654 specification at Abstract, col. 2:25-30, 2:61-67, 5:50-58, 6:55-60, 8:14-22, 9:62-10:4, 14:55-59, 15:57-63, 16:22-28, 17:10-21, 17:22-30, 18:16-26, 18:29-34, 25:47-50, 27:47-50, Figs. 1-8 and related text, Claims 4, 21.</p> <p>US Provisional Pat. App. No. 61/671,672 ¶¶ 0014, 0015, 0034, 0036, 0053, 0078, 0082, 0085, 0088, 0094, 0095, 00100, 00101, 00118, 00121, Figs. 1-8 and related text, Claims 1-3, 14, 17, 67, 78, Abstract.</p> <p><b>Extrinsic Evidence:</b></p> <p>ASSIA reserves the right to rely on the testimony of Richard Kramer. Mr. Kramer is expected to testify regarding how one of ordinary skill in the art would understand this term in light of the claim language, intrinsic evidence, and extrinsic evidence. Mr. Kramer is expected to testify regarding how one of ordinary skill in the art would understand statements in the specification and file history. Mr. Kramer is expected to testify that one of ordinary</p>	<p>Indefinite</p> <p><b>Intrinsic Evidence:</b></p> <p>'654 Patent at Abstract; 6:51-7:31; 9:22-10:17; 15:25-32; 17:10-52; 18:16-40; claims 1-5; claims 18-22; Fig. 3 (and associated text).</p> <p><b>Extrinsic Evidence:</b></p> <p>To the extent ASSIA relies on expert testimony in support of its position on the proposed constructions of this term, Charter reserves the right to rely on expert testimony of Dr. Zhi Ding in response. Charter further reserves the right to rely on additional extrinsic evidence to rebut ASSIA's positions on the proposed constructions of this term.</p>

**EXHIBIT A3: '654 Patent Proposed Constructions and Support**

	<p>skill in the art would understand this term to be a limitation and give life, meaning, and vitality to the claims. Mr. Kramer is expected to testify about the knowledge of one of ordinary skill in the art and the background of the art relevant to the construction of this term. Mr. Kramer will further rebut any expert testimony offered by Charter.</p>	
--	---	--

**EXHIBIT A4: '108 Patent Proposed Constructions and Supporting Evidence**

U.S. Patent No. 11,477,108		
'108 Claim Terms, Phrases, or Clauses	ASSIA's Proposed Constructions and Support	Charter's Proposed Constructions and Support
identifying one or more operational conditions within the WAN in a different communication layer from the one or more communication layers on the LAN  (Claim 1)	<p>No construction necessary; plain and ordinary meaning.</p> <p><b>Intrinsic Evidence:</b> '108 specification at Abstract, col. 3:43-66, 8:5-11, 8:12-20, 8:21-36, 8:48-58, 8:59-9:18, 9:19-33, 9:56-67, 10:22-24, 10:30-43, 10:44-60, 10:61-11:18, 11:19-31, 11:32-39, 13:60-66, 14:20-24, 14:33-41, 14:48-55, 14:56-64, 14:65-15:7, 15:37-62, 15:63-64, 16:10-14, 16:52-55, 16:62-17:4, 17:5-35, 17:36-64, 17:65-18:11, 18:12-36, 18:37-19:51, 19:52-20:37, 21:40-43, 22:53-67, 24:17-21, 24:64-25:2, 25:3-19, 25:24-30, 25:50-59, 27:24-32, 27:65-28:17, FIGs. 1-5, 6A, 6B, 6C and related text, Claims 1, 8, 15.</p> <p>File History of App. No. 13/995,900: October 6, 2015 Amendment/Request for Reconsideration-After Non-Final Rejection and Remarks.</p> <p>File History of App. No. 15/182,513: October 10, 2018 Response to Final Office Action.</p> <p><b>Extrinsic Evidence:</b></p> <p>ASSIA reserves the right to rely on the testimony of Richard Kramer. Mr. Kramer is expected to testify regarding how one of ordinary skill in the art would understand this term in light of the claim language, intrinsic evidence, and extrinsic evidence. Mr. Kramer is expected to testify regarding how one of ordinary skill in the art would understand statements in the specification and file history. Mr. Kramer is expected to testify that one of ordinary</p>	<p>“identifying one or more operational conditions within the WAN that is not in any of the same layers from which LAN information was collected to make that identification”</p> <p><b>Intrinsic Evidence:</b> '108 Patent at 9:15-18; 9:56-10:4; 14:33-47; 16:62-21:60; claim 1; claim 5; claim 6; claim 8; claim 14; claim 15; claim 19; claim 20.</p> <p><b>Extrinsic Evidence:</b> To the extent ASSIA relies on expert testimony in support of its position on the proposed constructions of this term, Charter reserves the right to rely on expert testimony of Dr. Zhi Ding in response. Charter further reserves the right to rely on additional extrinsic evidence to rebut ASSIA's positions on the proposed constructions of this term.</p>

**EXHIBIT A4: '108 Patent Proposed Constructions and Supporting Evidence**

	<p>skill in the art would understand this term to be a limitation and give life, meaning, and vitality to the claims. Mr. Kramer is expected to testify about the knowledge of one of ordinary skill in the art and the background of the art relevant to the construction of this term. Mr. Kramer will further rebut any expert testimony offered by Charter.</p>	
identifying, at the management device, one or more operational conditions within the WAN in a different communication layer from the one or more communication layers on the LAN  (Claims 8, 15)	<p>No construction necessary; plain and ordinary meaning.</p> <p><b>Intrinsic Evidence:</b> '108 specification at Abstract, col. 3:43-66, 8:5-11, 8:12-20, 8:21-36, 8:48-58, 8:59-9:18, 9:19-33, 9:56-67, 10:22-24, 10:30-43, 10:44-60, 10:61-11:18, 11:19-31, 11:32-39, 13:60-66, 14:20-24, 14:33-41, 14:48-55, 14:56-64, 14:65-15:7, 15:37-62, 15:63-64, 16:10-14, 16:52-55, 16:62-17:4, 17:5-35, 17:36-64, 17:65-18:11, 18:12-36, 18:37-19:51, 19:52-20:37, 21:40-43, 22:53-67, 24:17-21, 24:64-25:2, 25:3-19, 25:24-30, 25:50-59, 27:24-32, 28:65-29:13, 30:1-15, FIGs. 1-5, 6A, 6B, 6C and related text, Claims 1, 8, 15.</p> <p>File History of App. No. 13/995,900: October 6, 2015 Amendment/Request for Reconsideration-After Non-Final Rejection and Remarks.</p> <p>File History of App. No. 15/182,513: October 10, 2018 Response to Final Office Action.</p> <p><b>Extrinsic Evidence:</b> ASSIA reserves the right to rely on the testimony of Richard Kramer. Mr. Kramer is expected to testify regarding how one of ordinary skill in the art would understand this term in light of the claim language, intrinsic evidence, and extrinsic evidence. Mr.</p>	<p>"identifying, at the management device, one or more operational conditions within the WAN that is not in any of the same layers from which LAN information was collected to make that identification"</p> <p><b>Intrinsic Evidence:</b> '108 Patent at 9:15-18; 9:56-10:4; 14:33-47; 16:62-21:60; claim 1; claim 5; claim 6; claim 8; claim 14; claim 15; claim 19; claim 20.</p> <p><b>Extrinsic Evidence:</b> To the extent ASSIA relies on expert testimony in support of its position on the proposed constructions of this term, Charter reserves the right to rely on expert testimony of Dr. Zhi Ding in response. Charter further reserves the right to rely on additional extrinsic evidence to rebut ASSIA's positions on the proposed constructions of this term.</p>

**EXHIBIT A4: '108 Patent Proposed Constructions and Supporting Evidence**

	<p>Kramer is expected to testify regarding how one of ordinary skill in the art would understand statements in the specification and file history. Mr. Kramer is expected to testify that one of ordinary skill in the art would understand this term to be a limitation and give life, meaning, and vitality to the claims. Mr. Kramer is expected to testify about the knowledge of one of ordinary skill in the art and the background of the art relevant to the construction of this term. Mr. Kramer will further rebut any expert testimony offered by Charter.</p>	
"WAN rate"  (Claims 3, 10, 17)	<p>No construction necessary; plain and ordinary meaning.</p> <p><b>Intrinsic Evidence:</b> '108 specification at col. 8:59-9:18, 10:30-43, 14:65-15:23, 15:37-62, 15:63-16:7, 16:8-34, 16:35-51, 17:36-64, 17:65-18:11, 18:12-36, 18:37-19:51, 19:52-20:37, 21:47-56, 28:23-29, 29:18-24, 30:25-33, Claims 3, 4, 10, 11, 17, 18.</p> <p><b>Extrinsic Evidence:</b> Paul Bottorff, Nortel Networks, LAN and WAN Rate 10 GigE, Presented at IEEE 802.3 High Speed Study Group, September 1999 Interim meeting, September 27-29, 1999, York, UK [ASSIA_CHARTER-00032841 – ASSIA_CHARTER-00032853].</p> <p>Datasheet, Cisco XFP Modules for 10 Gigabit Ethernet and Packet Over-Sonet Applications [ASSIA_CHARTER-00033608 – ASSIA_CHARTER-00033615].</p> <p>IBM B-Type SAN Extension Platform Implementation Guide [ASSIA_CHARTER-00033616 – ASSIA_CHARTER-00033813].</p>	<p>Indefinite</p> <p><b>Intrinsic Evidence:</b> '108 Patent at 9:2-18; 15:37-62; 16:8-51; 17:36-18:36; 19:52-20:37; 21:40-56; 23:23-37; 24:11-36; claim 3; claim 4; claim 10; claim 11; claim 17; and claim 18.</p> <p><b>Extrinsic Evidence:</b> To the extent ASSIA relies on expert testimony in support of its position on the proposed constructions of this term, Charter reserves the right to rely on expert testimony of Dr. Zhi Ding in response. Charter further reserves the right to rely on additional extrinsic evidence to rebut ASSIA's positions on the proposed constructions of this term.</p>

**EXHIBIT A4: '108 Patent Proposed Constructions and Supporting Evidence**

	<p>Cisco, Campus Network for High Availability Design Guide [ASSIA_CHARTER-00032984 – ASSIA_CHARTER-00033057].</p> <p>Broadcom, Brocade® Fabric OS® Software Licensing User Guide, 8.2.x [ASSIA-CHARTER-00032935 – ASSIA_CHARTER-00032975].</p> <p>Product Brief, Brocade 7840 Extension Switch [ASSIA_CHARTER-00032976 – ASSIA_CHARTER-00032983].</p> <p>Datasheet, Brocade 7840 Extension Switch [ASSIA_CHARTER-00032921 – ASSIA_CHARTER-00032928].</p> <p>Fabric OS Software Licensing Guide [ASSIA_CHARTER-00032863 – ASSIA_CHARTER-00032920].</p> <p>White Paper, Brocade Networks for Dell EMC Enterprise Hybrid Cloud [ASSIA_CHARTER-00032854 - ASSIA_CHARTER-00032862].</p> <p>Zemlianov, Cooperation and decision-making in a wireless multi-provider setting, IEEE, 2005 [ASSIA_CHARTER-00033246 – ASSIA_CHARTER-00033257].</p> <p>Schulz, The Silence of the LANs: Efficient Leakage Resilience for IPsec VPNs, IEEE Transactions on Information Forensics and Security, Vol. 9, No. 2, 2014 [ASSIA_CHARTER-00033234 –</p>
--	---

**EXHIBIT A4: '108 Patent Proposed Constructions and Supporting Evidence**

	<p>ASSIA_CHARTER-00033245].</p> <p>Cole, Beyond 100G Client Optics, IEEE Communications Magazine, 2012 [ASSIA_CHARTER-00033225 – ASSIA_CHARTER-00033233].</p> <p>User manual, Mercusys MW155R 150 Mbps Wireless N Router, 2016, at 12, 17 [ASSIA_CHARTER-00033541 – ASSIA_CHARTER-00033607].</p> <p>IEEE Standards Working Group, P802.3ah Draft 2.0 Comments, 2003, at 31 [ASSIA_CHARTER-00033258 – ASSIA_CHARTER-00033540].</p> <p>Hewlett Packard, Broadcom, FOS 7.4.1d Release Notes, 2015, at 25 [ASSIA_CHARTER-00033058 – ASSIA_CHARTER-00033221].</p> <p>ASSIA reserves the right to rely on the testimony of Richard Kramer. Mr. Kramer is expected to testify regarding how one of ordinary skill in the art would understand this term in light of the claim language, intrinsic evidence, and extrinsic evidence. Mr. Kramer is expected to testify regarding how one of ordinary skill in the art would understand statements in the specification and file history. Mr. Kramer is expected to testify that one of ordinary skill in the art would understand this term to be a limitation and give life, meaning, and vitality to the claims. Mr. Kramer is expected to testify about the knowledge of one of ordinary skill in the art and the background of the art relevant to the construction of this term. Mr. Kramer will further rebut any expert testimony offered by Charter.</p>	
--	--	--

**EXHIBIT A4: '108 Patent Proposed Constructions and Supporting Evidence**